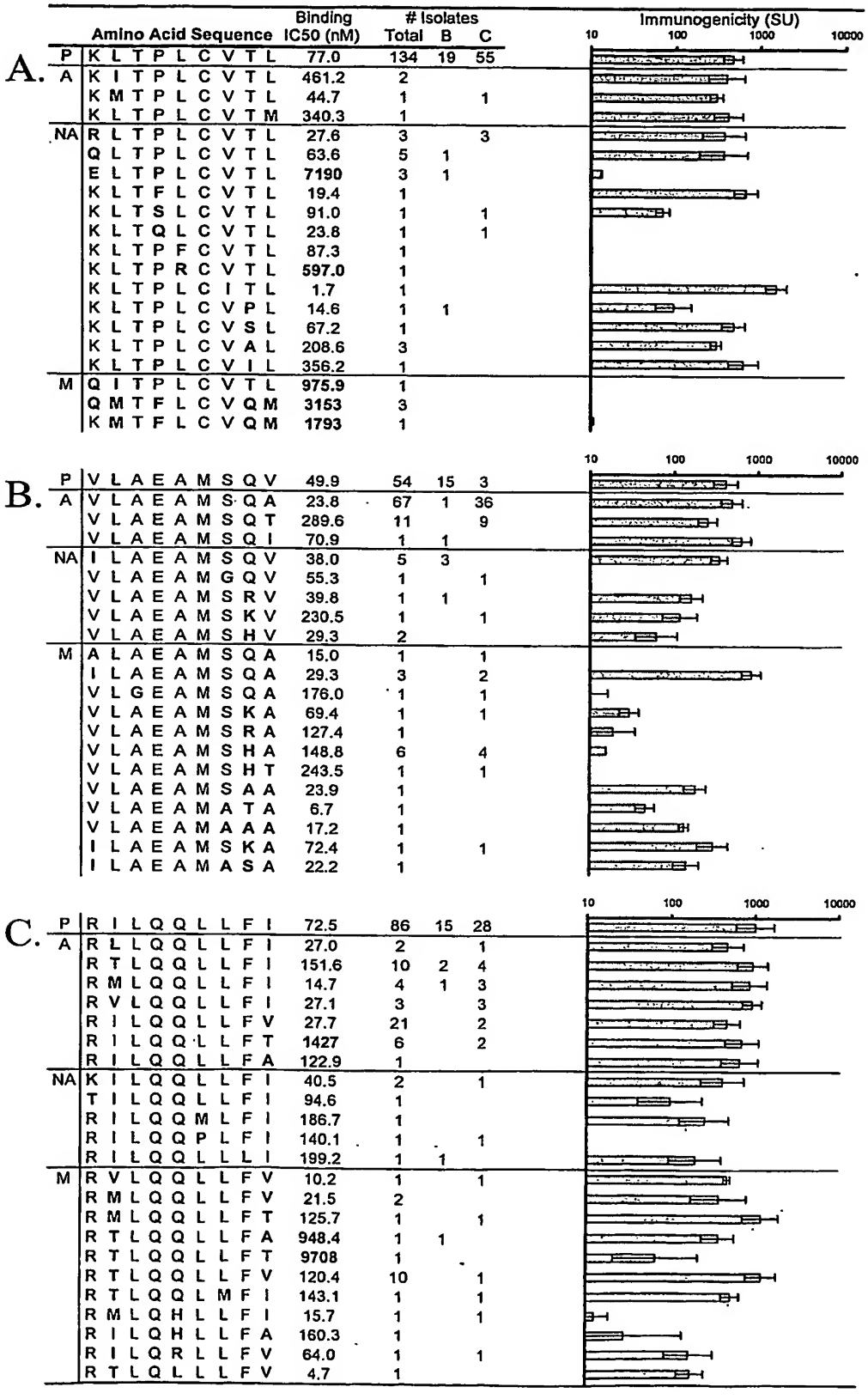
FIGS. 1A-1C


Amino Acid Sequence
Binding IC50 (nM)
Isolates Total B C
Immunogenicity (SU)
10 100 1000 10000
A.
P K L T P L C V T L 77.0 134 19 55
A K I T P L C V T L 461.2 2
K M T P L C V T L 44.7 1 1
K L T P L C V T M 340.3 1
NA R L T P L C V T L 27.6 3 3
Q L T P L C V T L 63.6 5 1
E L T P L C V T L 7190 3 1
K L T F L C V T L 19.4 1
K L T S L C V T L 91.0 1 1
K L T Q L C V T L 23.8 1 1
K L T P F C V T L 87.3 1
K L T P R C V T L 597.0 1
K L T P L C I T L 1.7 1
K L T P L C V P L 14.6 1 1
K L T P L C V S L 67.2 1
K L T P L C V A L 208.6 3
K L T P L C V I L 356.2 1
M Q I T P L C V T L 975.9 1
Q M T F L C V Q M 3153 3
K M T F L C V Q M 1793 1
B.
P V L A E A M S Q V 49.9 54 15 3
A V L A E A M S Q A 23.8 67 1 36
V L A E A M S Q T 289.6 11 9
V L A E A M S Q I 70.9 1 1
NA I L A E A M S Q V 38.0 5 3
V L A E A M G Q V 55.3 1 1
V L A E A M S R V 39.8 1 1
V L A E A M S K V 230.5 1 1
V L A E A M S H V 29.3 2
M A L A E A M S Q A 15.0 1 1
I L A E A M S Q A 29.3 3 2
V L G E A M S Q A 176.0 1 1
V L A E A M S K A 69.4 1 1
V L A E A M S R A 127.4 1
V L A E A M S H A 148.8 6 4
V L A E A M S H T 243.5 1 1
V L A E A M S A A 23.9 1
V L A E A M A T A 6.7 1
V L A E A M A A A 17.2 1
I L A E A M S K A 72.4 1 1
I L A E A M A S A 22.2 1
C.
P R I L Q Q L L F I 72.5 86 15 28
A R L L Q Q L L F I 27.0 2 1
R T L Q Q L L F I 151.6 10 2 4
R M L Q Q L L F I 14.7 4 1 3
R V L Q Q L L F I 27.1 3 3
R I L Q Q L L F V 27.7 21 2
R I L Q Q L L F T 1427 6 2
R I L Q Q L L F A 122.9 1
NA K I L Q Q L L F I 40.5 2 1
T I L Q Q L L F I 94.6 1
R I L Q Q M L F I 186.7 1
R I L Q Q P L F I 140.1 1 1
R I L Q Q L L L I 199.2 1 1
M R V L Q Q L L F V 10.2 1 1
R M L Q Q L L F V 21.5 2
R M L Q Q L L F T 125.7 1 1
R T L Q Q L L F A 948.4 1 1
R T L Q Q L L F T 9708 1
R T L Q Q L L F V 120.4 10 1
R T L Q Q L M F I 143.1 1 1
R M L Q H L L F I 15.7 1 1
R I L Q H L L F A 160.3 1
R I L Q R L L F V 64.0 1 1
R T L Q L L L F V 4.7 1

FIGS. 1D-1E

D.

	Amino Acid Sequence	Binding IC50 (nM)	# Isolates Total	B	C
P	V T I K I G G Q L K	15.5	18	13	1
A	V A I K I G G Q L K	151.3	2	1	
	V T I K I G G Q L R	64.0	2		
NA	V T V K I G G Q L K	60.7	11	1	
	V T I R I G G Q L K	14.4	3	2	
	V T I K V G G Q L K	59.4	2	2	
	V T I K I E G Q L K	69.4	2	1	
	V T I K I G G Q I K	183.5	1		
2NA	V T V K I G G Q L R	194.1	3		
	V T V K I G G E L K	39.2	1		
	V T V K I E G Q L K	23.2	4		
	V T V K V G G Q L K	54.3	3		
	V T V R I G G Q L K	15.2	6		
	V T I R I G G Q L R	22.9	2		
	V T I R V G G Q L K	13.2	1		
	V A I K I G G Q I K	940.2	1	1	
	V N I K V G G Q L K	1768	1		1
	V T I K I G G Q I R	388.5	1		
3NA	V T I K L G G Q I R	219.5	1		
	V T V K I E G Q L R	143.0	4		
	V T V K V G G Q L R	198.7	2		
	V T I R V G G Q L R	17.3	1		
	V S I K V G G Q I K	85.9	30		30
	V T V R V G G Q L K	19.3	1		
4NA	V T I R V A G Q V K	20.8	1		
	V S I R V G G Q T K	20.9	1		
	V S I R V G G Q I K	90.6	4		4
	V S I K V G G Q I R	1339	6		6
	V T V R I G G M Q K	13.4	1		
	V S I R V G G Q T R	240.6	1		1
	I T V K I G K E V R	12904	1		

Immunogenicity (SU) 10 100 1000 10000

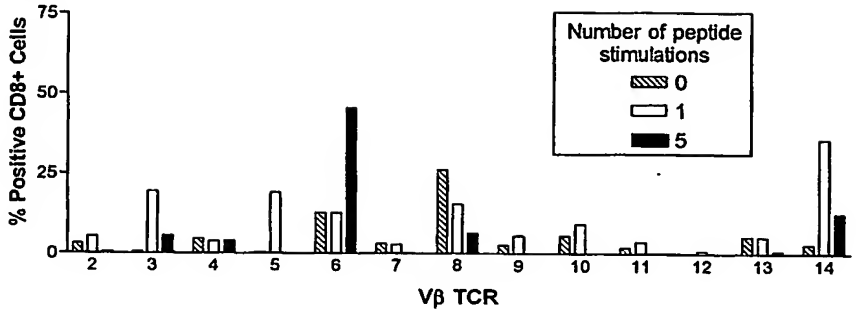
E.

P	V T V Y Y G V P V W K	9.2	99	21	30
A	V T V Y Y G V P V W R	22.3	40		18
NA	V T I Y Y G V P V W K	2.5	1		
	V T V Y D G V P V W K	18.8	1		1
	V T V Y Y G V P I W K	2.3	2		
M	I T V Y Y G V P V W R	75.9	1		
	V T I Y Y G V P V W R	3.0	1		
	V T V Y D G V P V W R	245.7	1	1	
	V T V Y Y G I P V W R	16.7	1		
	V T V Y Y G V P V R R	270.7	1		

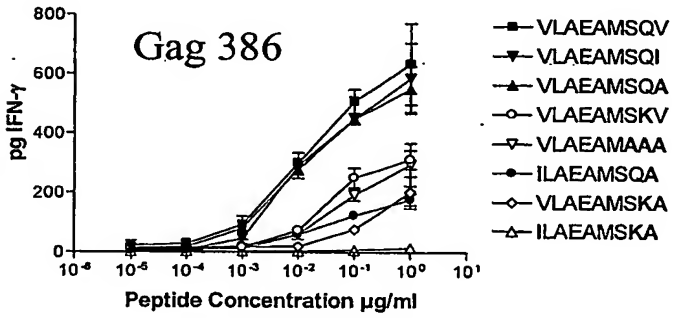
10 100 1000 10000

FIGS. 2A-2C

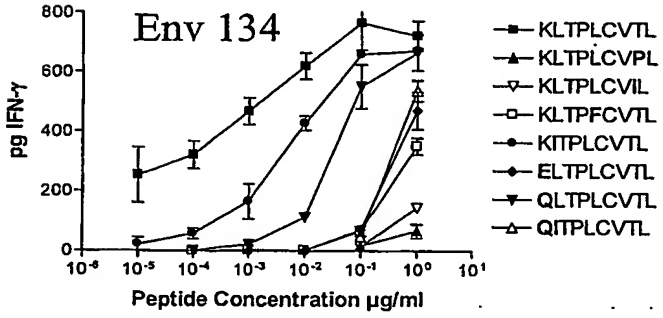
A.



B.



C.



FIGS. 3A-3B

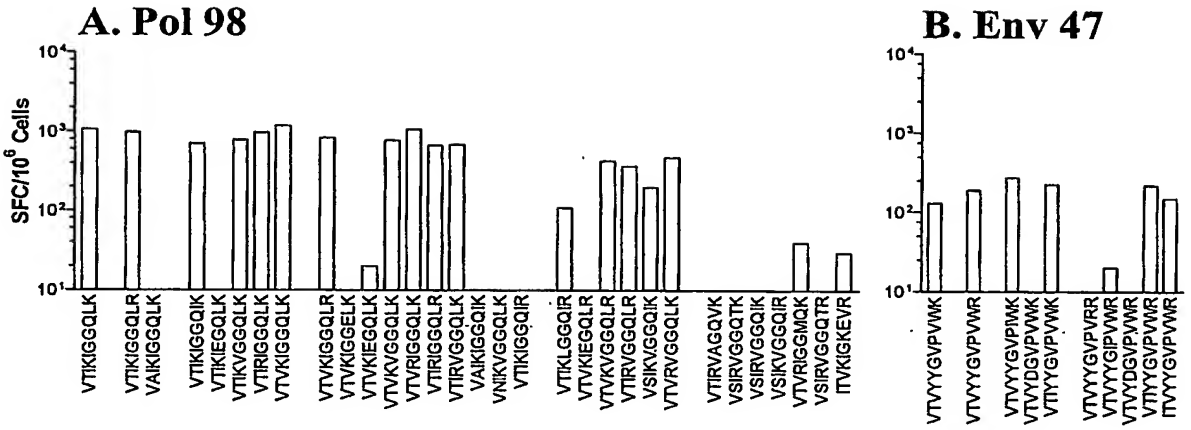

A. Pol 98
B. Env 47
SFC/10^6 Cells
10^4
10^3
10^2
10^1
VTIKIGGQLK
VTIKIGGQLR
VAIKIGGQLK
VTIKIGGQIK
VTIKIEGQLK
VTIKVGGQLK
VTIRIGGQLK
VTVKIGGQLK
VTVKIGGQLR
VTVKIGGELK
VTVKIEGQLK
VTVKVGGQLK
VTVRIGGQLK
VTIRIGGQLR
VTIRVGGQLK
VAIKIGGQIK
VNIKVGGQLK
VTIKIGGQIR
VTIKLGGQIR
VTVKIEGQLR
VTVKVGGQLR
VTIRVGGQLR
VSIKVGGQIK
VTVRVGGQLK
VTIRVAGQVK
VSIRVGGQTK
VSIRVGGQIK
VSIKVGGQIR
VTVRIGGMQK
VSIRVGGQTR
ITVKIGKEVR
VTVYYGVPVWK
VTVYYGVPVWR
VTVYYGVPIWK
VTVYDGVPVWK
VTIYYGVPVWK
VTVYYGVPVRR
VTVYYGIPVWR
VTVYDGVPVWR
VTIYYGVPVWR
ITVYYGVPVWR

FIG. 4

Amino Acid Sequence	Binding IC_{50} (nM)	# Isolates	Predicted Cross-reactivity MTNNPPIPV	Predicted Cross-reactivity MTSNPPIPV
M T **S** N P P I P V	52.8	60	-	+
M T **N** N P P I P V	128.4	33	+	+
M T S N P P **V** P V	21.8	26	-	+
M T **G** N P P I P V	125.1	15	-	+
M T **G** N P P **V** P V	2021	9	-	+
M T **N** N P P **V** P V	85.6	6	+	+
M T **A** N P P **V** P V	20.0	3	-	+
M T **H** N P P I P V,	167.0	2	+	-
M T **A** N P P I P V	2.3	1	-	+
M T **S** **D** P P I P V	107.4	1	-	+
M T G N P **S** I P V	15.8	1	-	+
M T G N P **A** I P V	1200	1	-	+
M T S N P **A** I P V	1465	1	-	+
M T **R** N P P **V** P V	9171	1	-	-